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PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 28 OCT 2004

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Applicant's or agent's file reference	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP 03/07057	International filing date (day/month/year) 03.07.2003	Priority date (day/month/year) 22.07.2002
International Patent Classification (IPC) or both national classification and IPC A61K7/11		
Applicant UNILEVER N.V.		


- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 3 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 02.12.2003	Date of completion of this report 27.10.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Werner, S Telephone No. +49 89 2399-7640



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP 03/07057**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-12, 14, 15 as originally filed
13 received on 16.07.2004 with letter of 13.07.2004

Claims, Numbers

7, 8 received on 16.07.2004 with letter of 13.07.2004
1-6 received on 26.07.2004 with letter of 21.07.2004

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☒ the claims, Nos.: 9,10
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

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6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	1-8
	No: Claims	
Inventive step (IS)	Yes: Claims	1-8
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-8
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

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Re Item V

1. The following document (D) is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D2: DE 195 36 423 A (KAO CORP) 4 April 1996

2. This international application claims

- a method of styling hair characterised by
 - the application of a mousse composition comprising
 - 2-hydroxyalkanoic acid and
 - less than 2 wt.% of surfactant (claim 1),
- the use of a respective composition
 - to style hair (claim 7) and
 - to impart humidity resistance to hair (claim 8).

3. The amended set of claims meets the requirements of Article 34(2)(b) PCT, the amendment not going beyond the disclosure in the international application as filed.

4. The present application meets the requirements of Article 33 PCT.

- 4.1 Document D2 is considered to establish the closest prior art.

D2 is concerned with hair styling compositions. The humidity resistance aspect is extensively evaluated in the examples (cp. page 7, lines 27-45). The compositions of examples 26-32 do contain 5 wt.% of 2-hydroxyhexanoic acid. Polymers and surfactants may also be formulated into the compositions disclosed in D2 (page 6, lines 18-44). On page 7, lines 2-6 it is clearly stated that products according to D2 might be in any form, including a mousse. This implies, that the respective compositions do contain a propellant.

Examples 26-32 of D2 further describe a method (page 12, lines 66-67) of styling

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hair by applying an aqueous composition comprising 2-hydroxyalkanoic acid to the hair.

The subject-matter of present claim 1 is distinguished therefrom in that the styling composition, which is applied to the hair, is in the form of a mousse. Furthermore, 2-hydroxyhexanoic acid is used instead of 2-hydroxyoctanoic acid.

Therefore, the subject-matter of claim 1 is new (Article 33(2) PCT).

In addition, the present application is concerned with the reduction of the amount of surfactant (cp. page 1, lines 24-27 and page 9, lines 13-16). According to claim 1, the amount of surfactants is restricted to below 2 wt.%. This aspect is not covered by D2.

Therefore, the subject-matter of claim 1 involves an inventive step (Article 33(3) PCT).

- 4.2 The same chain of argumentation does apply to the subject-matter of claims 7 and 8, since they refer back to claim 1.

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The compositions of the present invention may also contain adjuncts suitable for hair care. Generally such ingredients are included individually at a level of up to 2, preferably up to 1 wt% of the total composition. Suitable hair care
5 adjuncts, include amino acids, sugars and ceramides.

Packaging

Suitable spray containers are well known in the art and
10 include conventional, non-aerosol pump sprays i.e., "atomisers", aerosol containers or cans having propellant, as described above, and also pump aerosol containers utilising compressed air as the propellant.

15 The method of the invention comprises applying t emousse to the hair during or immediately before styling . It is preferable if the mousse is applied to wet or damp hair.

The following non-limiting Examples further illustrate the
20 preferred embodiments of the invention. All percentages referred to in the examples and throughout this specification are by weight based on total weight unless otherwise indicated.

Claims

1. A hair treatment mousse comprising 2-hydroxyalkanoic acid.
- 5 2. A hair treatment mousse according to claim 1 in which the 2-hydroxyalkanoic acid is selected from the group consisting of 2-hydroxyhexanoic acid, 2-hydroxyoctanoic acid, 2-hydroxydecanoic acid or mixtures thereof.
- 10 3. A hair treatment mousse according to claim 1 or claim 2 in which the 2-hydroxyalkanoic acid is 2-hydroxyoctanoic acid.
- 15 4. A hair treatment mousse in which the level of 2-hydroxyalkanoic acid is from 0.5 to 10 wt%
5. A hair treatment composition according to any preceding claim further comprising a styling polymer.
- 20 6. A hair treatment mousse according to any preceding claim further comprising a surfactant.
7. A hair treatment mousse according to any preceding claim further comprising a propellant.
- 25 8. A method of styling hair by applying to the hair a mousse comprising a 2-hydroxyalkanoic acid.
- 30 9. Use of a mousse comprising 2-hydroxyalkanoic acid to style hair.

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10. Use of a mousse comprising 2-hydroxyalkanoic acid to impart humidity resistance to hair.